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DISCUSSIONS.

THE DUKE OF ARGYLL ON PURPOSE IN NATURE.

I PROPOSE here to examine the Duke of Argyll's views on Teleology and Natural Selection, as set forth in the first part of *The Philosophy of Belief*, under the heading of "Intuitive Theology." The following passages give the gist of these views, and at the same time are fair samples of the author's methods of argument:

"Natural selection, as an agency in developing structures prior to their functional use, if it has any meaning at all, is simply a mental and directing choice. All the plausibility it possesses, as a phrase, rests upon, and consists in, its implicit reference to the analogies of mind. It is plain, therefore, that the somewhat refined and subtle objection to the old argument from design, that it represents the mind which is supreme in Nature as the mind of a mere artificer, is an objection which rests on incomplete analysis. It confounds the high functions of a conceiving mind, with the far lower functions of a mere executive mechanic."[1]

"There is a wide gap, in this respect (*i.e.* as regards purposive arrangements) when we pass from the organic to the inorganic world. The adaptations in the inorganic world are as pervading as in the organic, and are indeed, to a large extent, the same, inasmuch as the adaptation of organisms is, and must be, an adaptation to conditions in the external world. They are parallel and correlative. But, in the inorganic sphere, they are what we may describe as general, and not particular. The adaptation of mineral carbon, for example, in the shape of coal, to the wants of man, is a conspicuous example. Coal is, indeed, in its origin an organic product. But it belongs to the inorganic world now. The preparation of it and the storage of it as a source of energy in the bowels of the earth, has had an obvious purpose in the function it now discharges . . . In that higher world [of organic nature] itself, as we have seen, purposive adaptation is no matter of mere inference, but is so much the object of direct perception that the most ordinary descriptions of phenomena, as well as the most recondite and scientific, cannot escape from the recognition of it. But the indisputable unity of Nature precludes us from supposing even the possibility of this characteristic being confined to one region of Nature alone. What Professor Osborne says so forcibly of the organic world, is equally true of the inorganic, when we regard it in all its parts, namely, that the infinite complexity of its arrangements and adaptations 'preclude the possibility of fortuity.' The organic is in this matter the key to the inorganic.''[1]

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[1] *The Philosophy of Belief*, pp. 17, 18.

The indisputable unity of Nature precludes us from supposing even the possibility of this characteristic being confined to one region of Nature alone. Is the step, here made in so off-hand a manner, from a part to the whole of Nature, in truth justifiable? This is the question which really goes to the root of our author's argument. It will be time enough after answering it, to see how far he is justified in his initial contention that the purposive character of organic adaptations is comparable to that of human contrivances. At present, for the sake of argument, we will let that pass. But, we ask, can we intelligibly speak of purpose as pervading the *whole* of Nature? Is it not true, rather, that the entire point of asserting any action or disposition of things to be purposive, lies in the fact that we thereby *contrast* it with what our author himself calls "the blind and mechanical action of the physical forces"?[2] Here, so it seems to me, we have real difficulty in answering the question whether design is universal—a difficulty often inadequately expressed in the form of a doubt as to the competence of the human intellect to grapple with problems of this nature.

More than one passage could be cited, did space permit, to show how the Duke of Argyll first gives a meaning to the word 'purpose' by pointing a contrast between processes of a purely physical character and those indicative of mind, and then goes on to maintain that one particular side of this distinction must of necessity be suppressed. Perhaps, however, the following passage (in which the italics are mine) is the best suited to make the whole procedure plain. "The recognition of a mind is the recognition of something that we know, and the one leading feature by which we do so recognize it is purpose. We know this better than we know anything else in the world. It is identified with the ordinary action of our will. It is, in short, all that constitutes what we call ourselves, our individuality, our personality. *It differs essentially from all that we can see in the physical forces*, and it agrees with all that we do most certainly know as characteristic of ourselves in the use we make of these forces as the only tools with which we can work out our own designs. Here, *therefore*, we see again, not as a consequence worked out by argument, but as a part of the fact which is directly seen, that we have the distinct conception of a personal mind *as an object of our immediate recognition in the whole of Nature.*"[1] That this result cannot be said to have been "worked out by argument," is painfully obvious; but is no recommendation to one whose powers of mental vision do not enable him to embrace, in one comprehensive view, two mutually destructive assertions.

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[1] *Op. cit.*, pp. 175, 176.

[2] *Op. cit.*, p. 11.

Nor does the argument from the complexity of Nature seem any more successful. Quite the contrary. If the purposive or non-purposive character of phenomena could be shown to hinge on their mere physical complexity, this would simply amount to a demonstration of the automaton theory, with which Huxley and Clifford have made us familiar. That is to say, we should be compelled to refuse even to our own minds any power of controlling the course of physical events. For what justifies us in regarding mind as not merely revealed by, but as a real factor in the production of, say, a work of art, if not the belief that the physical activities therein involved cannot be made intelligible on purely physical grounds? In order, that is, to either anticipate or follow the actual doings of men, we must *supplement* our physical knowledge by our knowledge of mind; and so long as this can be upheld as the distinctive mark of purposive action, *but no longer*, the automaton theory may be regarded as a mere speculation. The light-hearted suppression of distinctions in the interest of theology is apt to provide its own nemesis.

Besides the distinction between purposive and non-purposive lines of action, the conception of design involves the distinction between means and ends. (Whether the terms of this last distinction fall strictly within the sphere of purpose, is a question we shall consider later.) The relation implicated in the last mentioned distinction is essentially one of subordination. To indicate any point in a system as an end, is so far to regard the other parts as existing *for its sake.* In biology, however, we have the conception of *the interest of the organism*, in virtue of which all the parts (and functions) of the organism are regarded as, in Kant's words, "reciprocally ends and means of each other." But what corresponding central idea is there in virtue of which we could treat the processes of Nature at large as even in such sense exhibiting this relation? In default of any such central idea, the solemn assurance that "it is a certain fact, and not a fancy, that in Nature all things are done by the use of appropriate means, and by the subordination of material structures to future work and function,"[2] cannot be made to yield any deeper significance than this: that every effect is produced by the cause which really does produce it, and not by some cause which produces a different effect. Causality is, in fact, the necessary *prius* in the selection of means towards a given end; so that it is in the strictest sense preposterous to regard it as by itself sufficient to constitute the relation in question.

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[1] *The Philosophy of Belief*, pp. 184, 185.

[2] *Ibid.*, p. 11.

The only way in which so much as the semblance of adaptive arrangements in inorganic nature can be produced, is by illicitly extending that conception of 'the interest of the organism' which gives a meaning to the word 'adaptation' as applied to organic nature. But the reader, one may be pardoned for believing, must be singularly uncritical, who can be satisfied with what our author offers him on this head in the place of argument.

In a passage already quoted, we are told that "the adaptations in the inorganic world" to a large extent are such "inasmuch as the adaptation of organism is, and must be, an adaptation to conditions in the external world. They are parallel and correlative." As regards the general sense of this remarkable deliverance it should, I think, be sufficient to reply: that to regard the adaptation of organisms to the 'external world' as synonymous with the adaptation of those conditions *to them*, is to take up the point of view of the pious Irishman who thanked Providence for having arranged that navigable rivers should flow near large towns. All the same, let us glance at the 'conspicuous example' afforded by coal. What particular one of the many 'functions' which coal "now discharges" is the function (mark the question-begging word) which betrays "obvious purpose." Is it the function of providing fuel for the bunkers of our battleships? Is it the function of enriching the owners of coal mines? Is it the function of inducing men to spend their days underground, so that from time to time they may be blown to bits or buried alive?

"But," it may be said, "this is mere trifling. Of course the author—as is further shown by his mentioning 'the wants of man'—only means his remarks to apply to the effects of the use of coal so far as these are beneficial to humanity in general." No doubt. But what reason has he to show for singling out the beneficial effects as having been intended, rather than their (for us) indifferent or noxious accompaniments? None whatsoever; for it is idle to refer in this connection to the so-called 'preparation' of the effect. There is no occurrence, however trivial or however hideous, whose roots do not strike back into an infinite past.

The assertion, then, that coal has a purpose is a quite gratuitous assumption. The assertion that the said purpose is obvious, must, to be even apparently intelligible, rest on the further assumption that the contriving mind is actuated by motives of benevolence. Of the first assumption, beyond the fact that it *is* such, we need merely remark that it is only made palatable by reason of the covert introduction of the second. The second assumption itself is flagrantly inconsistent with the author's reiterated disavowal[1] of any preconception as to the moral characteristics of the universal mind.

Considered in relation to the thesis our "conspicuous example" was to enforce, namely, that the transcendental purpose is really universal, the same assumption, inasmuch as it fastens on certain effects to the exclusion of others, is flagrantly inconsistent both with itself and with the facts of Nature. On page 174 of *The Philosophy of Belief* (to go no further afield in search of an example), we find it said that "the relation between teeth, or sets of teeth, and the function of seizing prey and tearing their flesh, is an object of direct perception and indisputable certainty." Seeing that it is on the adaptations in organic nature that the author rests his whole case, we have a sense of being trifled with when on the very next page we are asked to believe—with no more argument than is contained in the word 'obvious'—that the mind which planned the carnivorous type was benevolently concerned to store coal for the use of another portion of the animate world. May we commend the following passage, written by an observer of undoubted trustworthiness, to our author's attention?

"Suddenly the silence was again disturbed by the sound of the trampling and rushing of the oxen, as, mad with fear, they crashed through the underwood towards the open ground on our right . . . . Before they had run one hundred yards, the lions had got hold of one (presumably the hindmost), and the bellowings echoed and re-echoed from hill to hill across the narrow valley. I would that that distinguished naturalist, Mr. A. R. Wallace, could hear the piteous cries of an ox being slowly bitten to death by lions, or of a donkey being vivisected by hyenas. Such cries are terrible to listen to, and revealing, as they but too surely do, the frenzy of fear and agony of a dying brute, are a powerful appeal against the cold cruelty of Nature's inexorable laws."[2]

We come now to the question whether the adaptive character of organic arrangements compels us to regard them as the outcome of purpose properly so called, *i.e.*, of conscious purpose. But, we submit, it is quite beside the question to prove at great length that there really *is* adaptation. In *The Reign of Law*, for example, the Duke of Argyll devotes a whole chapter to showing that the structure of flying birds is adapted to the end of flight; and seems to think he has advanced his case by so doing. He really appears to forget that the theory of Natural Selection, which bears the brunt of his animosity, takes its stand on the existence of adaptations, and is essentially an attempt to account for their origin as adaptations. That theory, in truth, deepens and amplifies the otherwise vague conception of the interest of the organism—which conception is the very soul of the idea of organic adaptation.

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[1] See *e.g.*, *op. cit.*, pp. 147–149, 185, 193.

[2] F. C. Selous' *Travels and Adventures in South East Africa*, p. 413.

The Duke of Argyll's misrepresentations of his opponents are doubtless due to imperfect comprehension of their views, but misrepresentations they certainly are. It is quite in keeping with his usual methods that he should assert,[1] ostensibly *against the Darwinian*, that organs are made, not *by* use but *for* use. Now it is hardly too much to say that this, whether with regard to the history of the race or the normal development of the individual, is precisely what the unfortunate Darwinian himself contends for. The fundamental difference between the Darwinian and his critic does not lie in any divergence of view as to the reality of adaptation. No, it lies in the fact that the Darwinian, broadly speaking, regards phylogenetic change as *too intimately* connected with functional use to have preceded it in point of time; or, what comes to the same thing, regards the normal development of structural features as too intimately connected with the total economy of the individual to have been spread out, prior to the attainment of a useful level, over countless generations. That is why he does not need to assume that *individual variation* is not variation, *i.e.*, that it is specifically determined along lines of utility. It is sufficient for the Darwinian that, among the countless neutral or hurtful variations, there should be some which are useful. The racial fixation of these last, supposing them to become fixed, he ascribes, partly to the presence of favoring circumstances, but primarily to the fact that they *are* useful. And the fixation (*i.e.*, normalization) of a variation is the beginning of a new species.

All the *à priori* objections which are brought forward in *The Philosophy of Belief*, against Darwinism and by way of proving that adaptation must be intentional, fall naturally under one of two heads: (1) that adaptation involves the relation of means and end, *i.e.*, that adaptation is adaptation; (2) that in describing organic structures, etc., we cannot avoid using the language of purpose. To the first of these two arguments we have already accorded all the attention it deserves. We pass, therefore, to a consideration of the second, which forms the main topic of the first three chapters of *The Philosophy of Belief*.

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[1] Cf. his article, in the *Nineteenth Century* for April, 1897, entitled "Mr. Herbert Spencer and Lord Salisbury on Evolution," p. 569.

We admit that adaptation partakes of the nature of purpose, just so far as it involves the relation of means and end; and to this extent we are clearly justified in using the language of purpose. The dominant feature in fact of the Darwinian position is simply this: that we must distinguish between purpose merely as adaptation, and purpose *properly so called*, which involves foresight and conscious choice. Such being the true nature of our position, it is plain that the second of the two arguments above mentioned is reduced to the level of the first. To argue that adaptation indicates mental purpose because it involves the relation of means and end, which is all that these *a priori* arguments, at their best, ever amount to, is to beg the whole question. Whosoever, then, would fain satisfy himself whether Darwin has made out his case, must study the writings of that author as they stand, and must not content himself with contemplating a list of words used therein. Unfortunately, the former of these two methods entails much greater mental labor than the latter.

In fairness, however, to the Duke of Argyll, we must reproduce his general statement of the new method—if that method can be called new, which is simply the most familiar of fallacies indued with the dignity of a logical canon—he proposes for elucidating the dark ways of nature: "Language . . . . is the automatic expression of, and the witness to, that which we do really see—all the more to be trusted because of the fact that it is an unconscious witness. It is like the photographic surfaces, which are now made so wonderfully sensitive that, when turned to the sky, they become impressed with the images of stars and of other heavenly bodies which escape altogether from the grasp of conscious vision. So it is with words. It is vain to dispute their self-recording testimony. They cannot report anything which does not really shine in upon the self-consciousness of man, or, in other words, which he does not really see."[1]

Linguistic research—in which, by the way, we are as liable to error as in any other form of investigation—throws light on what men have thought, but it cannot tell us whether they have thought aright. In illustration whereof I will content myself with pointing out that our author's principle logically compels him to reject the Copernican theory, because we talk of sunrise and sunset. Observe, however, the treatment he himself metes out to the "self-recording testimony" of words, when it happens to point in what he considers the wrong direction: "It is nothing but a most careless blunder if we allow ourselves to be deceived by the distant, dim, and partial analogies at which the speech-making instinct in man has clutched in order to bridge over the chasms of thought which yawn between the phenomena of matter and of mind. What we—for want of a better image—call the motives which act upon our wills, and between which they must decide, have, in themselves, the quality of good and evil as judged by knowledge and by conscience. A motive power in mechanics can never be either good or bad."[1]

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[1] *The Philosophy of Belief*, p. 18.

But supposing that after all natural selection turns out to be nothing but a will-of-the-wisp, what does our author's argument gain thereby? We have seen that in accordance with the view which regards mind as having any influence at all on the course of physical events, the distinctive character of purposive action lies in the fact that it cannot be scientifically understood without taking into consideration the facts of consciousness. But the assumption of what we may call hyper-physical influence on the course of physical events is, as we shall see presently, scientifically serviceable only because we can identify the conscious agent with a particular organism, and thus indicate the physical conditions of that hyper-physical influence. If, then, the structure of organisms is due to mind *in the same sense as that in which human contrivances are due to mind*, it is the organism itself which has intentionally produced its own structure—unless, indeed, it has been artificially fashioned by some other organism. Thus for Darwinism we shall simply have substituted a riotous version of Lamarckism.

If, on the other hand, we say, with the Duke of Argyll, that the mind herein concerned is universal and so has not any special physical abode, we thereby destroy all analogy between the works of that mind and human action. And, in a psychological regard, the formation of design is indissolubly bound up with the relation in which the individual stands to the physical world at large. More precisely, it is of the very essence of human purpose that, on the one hand, we form as to our body a part of the physical world, while, on the other hand, it is only over our own body that we have any direct control. For a plan—whether it be actually carried out or not, makes no difference to what we have here to urge—that should take no account of the means necessary to the attainment of the end in view, could hardly be called a plan; and it is only by bodily intervention that we effect any change in our material environment, or any deflection of the ordinary course of nature. From which it also follows that volition involves an antithesis between what *shall* be, and what but for our interference *would* be. In fine, purpose, as we know it, is essentially *contemplated bodily action;* and rational volition is purpose made active. Hence the absence of analogy between the operative methods of the transcendental mind and the possibilities of action open to the 'mere artificer,' entails also a complete absence of analogy between the alleged activity of that mind and human volition. In other words, the assumption of a contriving mind without any special local habitation, as a means of explaining the facts of organic nature, is for physical science simply a way of relegating the phenomena to the region of the miraculous; while for psychology it is an absurdity. The connection between organism and purpose is indeed most intimate; but it is purpose (proper) that implies organism, and not *vice versa.*

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[1] *Op. cit.*, pp. 482, 483.

The need, therefore, for a distinction between adaptation, simply as such, and purpose properly so called—whether the theory of natural selection be accepted or not—really forces itself upon us as soon as we begin to reflect on the nature of purpose. The theory of natural selection, however, drives home the necessity of the distinction; while by impressing a dynamic, in place of a relatively static, form on the fact of adaptation, it elucidates the *relation* between the two terms of the distinction. Both organic adaptation and purposive action fundamentally represent an adjustment—the former in respect of the type, the latter in respect of the individual—to the fluctuating conditions of existence.

To conclude: the chief defects that have revealed themselves in the theory of a universal purpose, as expounded in *The Philosophy of Belief*, are: (1) that the theory misses the point of Darwinism; (2) that, in place of Darwinism, it has nothing to offer us but a miraculous agency; (3) that, whether taken in its full extent or in its special application to organic nature, it is at bottom unmeaning.

HOWARD V. KNOX.

PRIMARY EMOTIONS.

BY the term 'primary emotions' we mean those simple elementary emotions into which all emotions may be analyzed, just as all shades of color may be considered as due to the combination of certain primary colors, or all material substances as due to the combination of